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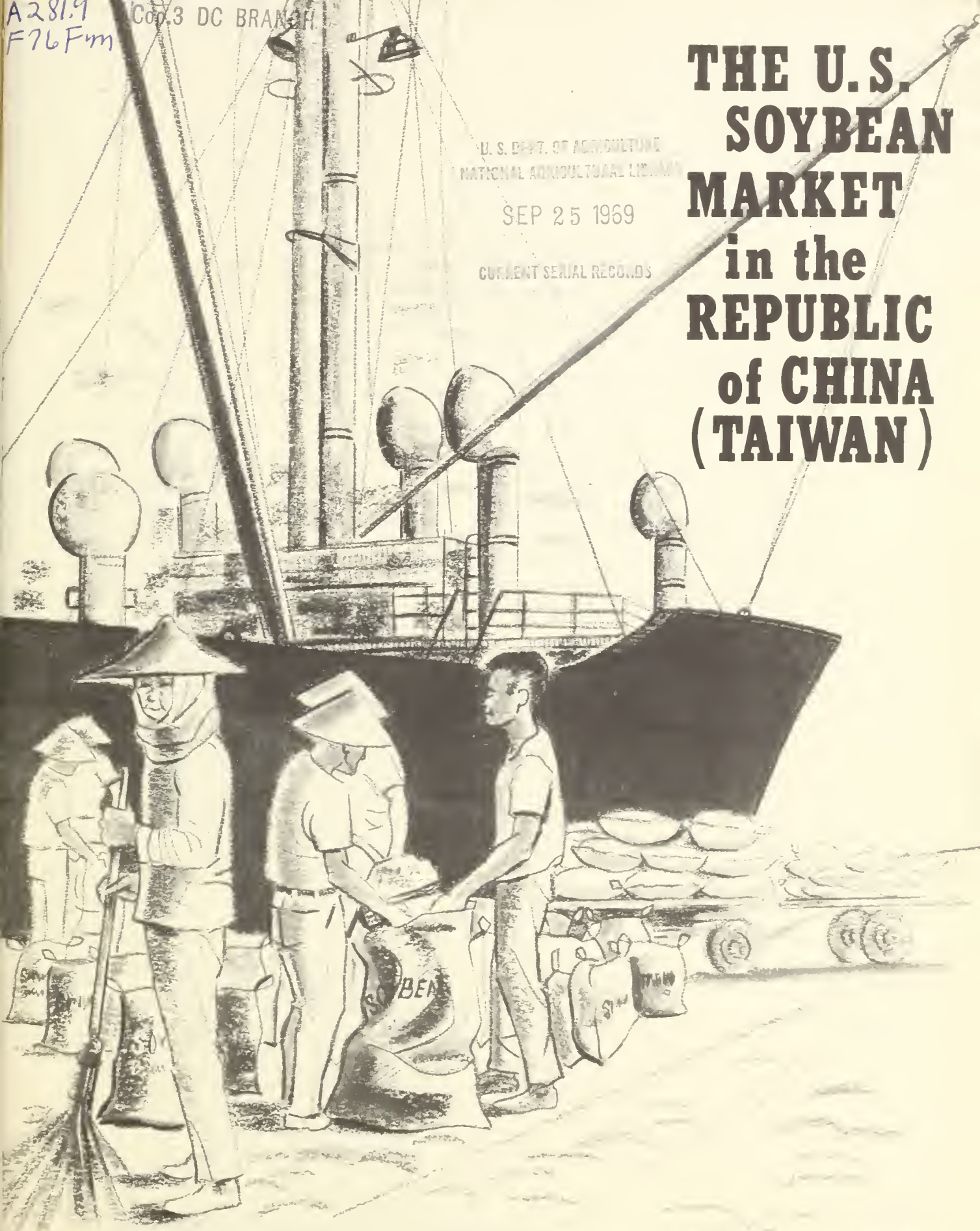
THE U.S. SOYBEAN MARKET in the REPUBLIC of CHINA (TAIWAN)



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Foreword

The Republic of China (Taiwan) has developed a strong, progressive economy in recent years. This small island made near-phenomenal strides in both agriculture and industry in the late 1950's and early 1960's and by the mid-1960's was recognized as a growing dollar market for U.S. soybeans and soybean products.

Taiwan achieved a foreign-trade surplus by 1964 after exports of agricultural and manufactured goods rose substantially in the early 1960's. Long dependent on the United States for a large share of direct assistance and economic aid, Taiwan moved from aid to trade status by 1965. In 1966 soybeans were removed from controls, and with the booming economy of 1967-68, U.S. soybean exports–all for dollars–leaped to record levels.

Through the industry of its farmers, Taiwan has achieved record crop yields and has averaged two crops per year. Outputs of sugar and rice have increased, and new commercial export crops such as pineapple, asparagus, mushrooms, and bananas have been developed and marketed successfully. But land for the development and expansion of oilseeds as winter or other crops appears limited. Therefore, we believe that U.S. soybeans will continue to be important in Taiwan's development. As the country proceeds with expansion of its livestock and poultry industries, U.S. soybeans can be expected to fill the gap between domestic production and requirements, as shown in this study.

This publication is based largely on the author's personal contacts with key industry sources. Its primary aim is to provide the U.S. oilseed and oilseed-product industries with information on the past and potential development of their Taiwanese counterparts and the market situation in Taiwan for U.S. soybeans. Comments on this study, as well as suggestions for future ones, will be welcome.

The author would like to express his appreciation to Norman J. Pettipaw, U.S. Agricultural Attaché to the Republic of China, for his assistance during the author's survey of Taiwan's oilseed industry and for his review of this study. He would also like to acknowledge the cooperation of many Taiwanese soybean crushers, importers, and dealers as well as government officials who kindly provided both their time and much of the information contained herein.

Howard A. Akers, Acting Director
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The U.S. Soybean Market In the Republic of China (Taiwan)

By Calvin C. Spilsbury, Fats and Oils Division

Introduction

The Republic of China (Taiwan), with one of the world's highest economic growth rates, is an important cash market for U.S. soybeans and soybean products. It is a potential market for at least double the quantity of soybeans now being imported, and the United States can be expected to provide most of this increase. In 1968 the United States exported to Taiwan for dollars a record of nearly 380,000 metric tons or almost 14 million bushels of soybeans valued at nearly $35 million. This compares with shipments of 334,000 metric tons or 12.3 million bushels in 1967 and average shipments, all under U.S. aid programs, of 154,000 tons or 5.7 million bushels in 1960-64. U.S. dollar exports of refined soybean oil to Taiwan amounted to only 1.7 million pounds in 1968, compared with 7.4 million in 1967 and an average under programs of 3.7 million in 1960-64. Very little soybean cake or meal is now imported. Dollar sales of U.S. soybeans have been developed through the private trade since 1966 and with the expanding economy are expected to continue. U.S. economic aid to Taiwan terminated in 1965.

While the market for U.S. soybean oil appears to be declining in Taiwan, the market for U.S. soybeans has become firmly established. Soybeans are recognized as one of the few imported agricultural commodities essential to the welfare of Taiwan. Because cultivated land is limited and a growth rate of only around 3 percent is estimated for the relatively small domestic oilseed crops—including soybeans, rapeseed, peanuts, and sesame—large imports of U.S. soybeans will be needed to meet the country's growing demand for food and feed. Total supplies of domestically produced oilseeds for crushing are expected to decline.

The Taiwan oilseed crushing industry has undergone a complete technological turnover since the end of World War II and particularly since 1955. The country now boasts 36 solvent-extraction plants, many of them with modern continuous systems. Although most of them are relatively small, the solvent mills are now capable of handling over 500,000 tons of soybeans and other oilseeds annually. Technical changes are still going on at a fairly rapid rate as many mills are currently installing larger continuous solvent units. Total solvent capacity of over 800,000 tons of soybeans is expected to be reached and used in the next 5 to 10 years. Taiwan crushers also plan to increase their refining and processing capacity for vegetable oils, and several are at the present time building hardening facilities for the production of margarine and shortening. Much of the equipment is being manufactured locally, and other equipment is being purchased abroad, particularly from Japan and the United States. Also, many feed-mixing plants that utilize oilseed proteins from the crushing mills have been built in recent years, and future expansion is expected to bring a consolidation into larger, efficient, and more productive units. Many of these feed plants have been built by the oilseed crushing mill operators.

Per capita income is expected to double during the coming decade, creating a vast new market for meat and protein products. Correlated with this new demand will be a rising market for fats and oils, high-protein oilseed meals, and soybean foods; this points directly to larger soybean imports.

Taiwan's vegetable oilseed crushing and refining industry has been integrated more with the feed industry than with the soap industry as in many countries because of the rural nature of the crushing industry. The soap industry in Taiwan is largely an independent tallow and grease industry that has been backed by U.S. and Japanese interests. Supplies of tallow and grease have been imported regularly from the United States in recent years.

Taiwan has long been a protein-deficit area and was an importer of oilseed cake for many years prior to establishment of today's modern soybean crushing industry. By importing soybeans from the United States, Taiwan has consolidated its imports and obtained a reliable source of both cake and meal and vegetable oil. With a reliable source of soybeans and also of corn, both the oilseed-crushing and livestock industries can be expanded, and Taiwan can look forward to having sufficient supplies of fats, oils, meat, and livestock products to feed its expanding population.

THE MARKET

Taiwan is a market of 14 million people with a 1968 population growth rate of less than 2.3 percent and an urban population of over 8 million. Around 57 percent of the labor force is nonagricultural; 17 percent is employed in manufacturing, 11 percent in commerce, and 29 percent in other pursuits. The country is located 90 miles from the Chinese mainland and occupies a land area of 13,900 square miles, less than the combined areas of New Hampshire and Connecticut. Cultivated land is located primarily on the fertile west coast plain and constitutes 29 percent of the total land area (16 percent paddy, 13 percent dry land), a high proportion for the Far East. The average size of a farm is only 2.5 acres. The density of the population is 1,010 per square mile, making Taiwan one of the most heavily populated countries in the world. On most land, an average of two crops per year is produced, but on some land three or even four are raised. Taipei, the capital of the Republic of China and its largest market area, has a population of 1.6 million. Other large cities that are important market centers are located on the west coast and include Taichung, Tainan, and Kaohsiung.

Soybeans are both a food and feed oilseed in Taiwan. Because of their variety of uses, many of them essential, they are indispensable to the economy. They supply vegetable oil and fats for food and industry and protein foods like the traditional Chinese soybean milk and cheese. Since Taiwan's economy was once integrated with that of Japan, the Taiwanese also eat many Japanese soybean foods such as miso (paste) and tofu (curd). Per capita consumption of soybeans for food is estimated at around 5½ pounds, compared with around 4 pounds in 1958. Soybean oil is now Taiwan's major source of edible fats and oils in a total vegetable oil consumption of around 12 pounds per capita. Soybeans also supply cake and meal for high-protein feeds used by the expanding poultry and swine industries.

Domestic production of soybeans rose from about 4,000 metric tons in 1935-39 to 72,996 tons in 1968. Historically, imports of soybeans and soybean products have been large. In 1938 over 45,000 metric tons of soybeans and about 164,000 tons of soybean cake were imported, mainly from Manchuria.

In addition to soybeans, Taiwan produces a number of other oilseeds, including peanuts, rapeseed, and sesame. Total production reached about 180,000 tons in 1967 and fell to about 154,000 in 1968. Production of peanuts was 95,899 tons in 1967, but only 60,000 tons were crushed for oil. An estimated 36,000 tons were used for edible purposes and seed. Production fell to 74,440 tons in 1968. Rapeseed and sesame production has been less than 5,000 tons of each in the last 3 years. Competition for and intensive cultivation of the limited available land are expected to slow down the upward trend in production of oilseeds, most of which are grown as a second or third crop following rice and vegetables.

THE OILSEED CRUSHING INDUSTRY

Oilseed crushers in Taiwan have in recent years developed a modern industry capable of efficiently handling growing volumes of soybeans through use of modern continuous-solvent extraction units. Normal hexane solvent needed for this new technology has been produced locally; this has aided in the development and expansion of the industry. At the end of 1954 one new solvent-extraction plant with a daily extraction capacity of 80 metric tons of soybeans, peanuts, or rice bran was completed by the Kaohsiung Agricultural Chemical Works of the Taiwan Sugar Corporation. Development of the soybean processing industry has continued since that time with the installation of many smaller continuous-solvent units at crushing plants throughout the island. This expansion in plant capacity is still going on, and there is no doubt that the industry will be able to adequately handle the increased quantities of soybeans that will have to be imported to supply the anticipated protein-meal requirements of the expanding livestock and poultry industries.

Former soybean-crushing equipment—screw and hydraulic presses—is currently being used to crush rapeseed, sesame, copra, and other oil-bearing materials.

Organization and mill location

The vegetable oil crushing industry was originally organized into an association in 1950 by a group of 20 crushers using screw presses. The association has expanded steadily since that time, and in 1967 some 86 crushers were members. This included 35 solvent-extraction operators. Known as the Taiwan Regional Association of Vegetable Oil Expelling and Refining Industries, the group is located at 82 Nan Yuan Street, Taipei.

The large oilseed-crushing mills in Taiwan are for the most part located in or near the three large population centers. In addition, there are crushing mills in nearly every city, and several hundred small crushing operations are located in the small farm centers, where they process locally produced oilseeds.

The largest group of oilseed-crushing mills is located in the central western area near the source of domestic supplies. There are 22 in Taichung Prefecture, 9 in Changhua, and 5 in Miaoli. Another group is concentrated in the southwestern area, where 36 of the largest mills are near the port of Kaohsiung—11 in Tainan Prefecture, 13 in Kaohsiung, and 12 in Pingtung. These process mainly imported soybeans. A third group is in the northwest area around Taipei; here, there are 13 mills, 7 in Taipei Prefecture, 4 in Taoyuan, and 2 at the port of Keelung. Other mills are located at Hualien, Yunlin, Chiayi, and Hsinchu.

Number and type of mills, crushing capacity

According to the Taiwan Regional Association of Vegetable Oil Expelling and Refining Industries, there are now 99 oilseed crushing mills with a total crushing capacity of about 1.3 million metric tons annually. The number of solvent-extraction mills is 36 capable of crushing about 550,000 tons annually, an average of about 45 tons per day per mill. There are 63 screwpress and hydraulic mills with a total capacity of 750,000 tons.

In the past soybeans were crushed mainly in three types of commercial equipment: hydraulic presses, cage presses, and mechanical screw presses. However, since the end of World War II, solvent-extraction, both continuous and batch methods, has become the major single process used for soybean crushing in Taiwan.

The installation of the new continuous solvent-extraction for the most part has been accomplished during the last 15 years. The rapid growth and expansion of the oilseed crushing industry during that time can be measured by comparing the present capacity of 1.3 million tons with that of 400,000 tons in 1954-55. At that time, the country had only one modern solvent plant, that of the Taiwan Agricultural Chemical Works, which started operations in December 1954. There were also 22 semimodern screw-press mills with 404 mechanical screw presses with a capacity of 24,700 metric tons of soybeans a month, 80 old mechanical or hydraulic mills, and 400 cottage-type pressing mills.

Although Taiwan's soybean-crushing plants have substantially increased their efficiency, they still are crushing some soybeans by hydraulic press to produce soybean cakes (wheels). Processing rates now average over 15 percent oil recovery; however, many solvent-extraction plants recover 10-11 pounds of oil per bushel of soybeans crushed, a recovery rate of 18 percent. Oil content of the meal at these plants is less than 1 percent. In 1953 only 10 out of 30 of the larger soybean-extraction plants in Taiwan were capable of attaining an oil-recovery rate of over 12 percent. Modernization of the oilseed-crushing industry is bringing a rapid expansion in capacity and increased efficiency with solvent extraction. Investment in this industry has been continuing.

Oilseed crushing mills in Taiwan are relatively small when compared with the large ones found in Japan, where several of the many mills can process over 500 tons per day. A survey of approximately 50 percent of the large operating mills by number of employees indicated that only around 8 percent employed over 50 people on a permanent basis. The largest percentage of mills had 11 to 20 employees, as indicated below:

Number of employees at crushing mills	Percent of mills in group
0 - 10	21
11 - 20	50
21 - 30	12
31 - 40	7
41 - 50	2
51 and above	8

SOYBEAN OIL AND FOODS

Soybean oil utilization and production

Taiwan's vegetable oil consumption in 1951 was only around 3.3 pounds per capita, compared with the government's stated requirement of 8.0 pounds. Since that time, there has been a steady increase in consumption, but it is still relatively low. In 1968 per capita consumption of all fats and oils was estimated to have reached 18.5 pounds, comparable with that of Japan. Consumption is expected to continue to increase at a uniform rate as per capita incomes rise. Use of animal fats will also increase, as production of pork and other meat products is expected to expand substantially.

As in many countries of the Far East, the Taiwanese consumer has a taste preference for crude peanut oil, sesame oil, and rapeseed oil, in that order. And because housewives of Taiwan prefer these tastes in their cooking oils, soybean oil is often marketed as a blend with peanut or rapeseed oil. However, both pure peanut oil and pure soybean oil are available to the consumer; refined soybean oil is priced at from 10 to 15 percent below that of semirefined peanut oil. In 1967 peanut oil (2d grade) averaged the equivalent of 22.8 cents per pound, compared with 20.2 cents for soybean oil (2d grade). In 1968 prices declined slightly; peanut oil averaged around 22 cents per pound and soybean oil, 18.5 cents.[1]

For many years now soybean oil has been the principal vegetable oil consumed per capita. Per capita consumption of soybean oil is estimated around 6 pounds and that of peanut oil, 4 pounds; total consumption of vegetable oils is around 12 pounds. Consumption of animal fats is estimated at around 6 to 8 pounds. Total consumption of fats and oils is now around 18 to 20 pounds per capita. This compares with a total consumption of 51 pounds in the United States.

Soybean oil production in 1967 was 23,618 metric tons and in 1968 reached 38,141 tons. A large volume of the soybean oil is sold in bulk direct to housewives who bring their own containers to the store or market. While soybean oil is refined and deodorized prior to marketing, quality is a problem because bulk marketing, storing, and processing techniques are not uniform. Several processors have plans for packaging soybean oil in consumer-type tin, plastic, and glass containers. However, glass and plastic containers are not yet on the market in large quantities. Tin and some glass containers have been used for special oils such as safflower and sesame. It has been estimated that 95 percent of the soybean oil marketed is refined for edible use and is used as liquid oil in cooking and as salad oil.

Soybean foods

Soybean food products have long been essential to the Taiwanese diet, and pork is not substituted for these traditional foods. The three chief soybean food products are soybean paste or miso, soybean sauce or shoyu, and curd (tofu). Production of soybean milk has been expanded in several areas in recent years. Although commercial production of these foods has been increasing, large quantities are still produced in the home.

Manufacture of miso requires several weeks and involves cooking the soybeans, then adding a specific mold culture which is allowed to "ripen" the paste for several weeks. Rice and salt are also used in combination with soybeans in manufacturing paste. The end product is used almost daily by the Taiwanese in making bean soup, providing added protein for their low-meat diet.

Shoyu is also important in the Taiwanese diet and provides salt as well as protein for dishes of rice, pork, and fish. Wheat is also used as an ingredient in making this sauce. Taiwan has a large soy sauce industry which produces the bulk of the soy sauce consumed locally. The sauce is marketed in bottles.

Many of the soybean foods are produced in the home in vessels or large crocks. The byproducts of soy sauce are used for livestock feed. Sterilized soybean milk made from U.S. soybeans has been made in commercial factories and is distributed in the large cities. Soybean milk, the product obtained from pressing soaked, dehulled soybeans, is coagulated with calcium carbonate and either dried to form sticks or curd or used directly as milk. The curd is also allowed to ferment to produce soybean cheese. As in Japan, every city has many small plants that produce soybean food products.[2]

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[1] *Wholesale Prices in Taiwan,* Industry of China, Taipei, Taiwan.

[2] Dawson Chu, *The Production of Protein Rich Foods in the Republic of China,* Industry of Free China, Taipei, Jan. 1964, pp. 21-34.

The soybeans required for the manufacture of paste, sauce, milk, and other foods are largely produced domestically. Soybean foods in 1968 are estimated to have required over 35,000 tons of beans, compared with 34,417 tons in 1967; most were used for bean curd. Consumption of soybeans for bean curd is expanding, as is their use in production of soybean sauce, soybean milk, and many other soybean foods. It is estimated that in 1969 40,000 tons will be required for bean curd and 3,000 tons for soybean sauce. Use of soybean meal in the sauce and curd industries can be expected to expand. In rural areas of Taiwan soybean milk cooperatives have been organized under government auspices. Members use their own soybeans and make their soybean milk at common soybean milk shops.

SOYBEAN MEAL DEMAND

The development of a commercial broiler industry, expansion of egg production, a sudden stimulation of hog production, and increased use of soybean meal in soybean foods all point to the expansion of the soybean meal market in Taiwan. Behind the scenes in these developments have been increased returns to farmers from higher hog prices and lower feed costs since both soybeans and corn were freed from import controls.

Technical developments in the feed industry are providing improved, balanced feeds that give maximum poultry and hog growth and freedom from the usual diseases that have depleted the industries in the past. In general, farmers are becoming aware of the nutritional requirements of their livestock and the advantages of new breeds of broilers and hogs. Institutionalization in both the broiler and hog industries has also been a contributing factor as large scale production of both hogs and broilers has been developing. The Taiwan Sugar Corporation, a government-owned enterprise, has entered the hog-raising business in Taiwan; soybean meal is provided by the company's modern solvent-extraction plant at the Kaohsiung Agricultural Chemical Works, which has a production capacity of around 60 tons of toasted soybean meal per day. There has also been a vertical integration to some extent in hog raising. Farmers are provided with supplement soybean meal feeds. The opening and expansion of new abattoirs for hogs, ducks, and broilers and the development of export markets have all been directly behind this expansion. The outlook is bright for soybean meal for feed.

The feed requirements for poultry and swine will be increased approximately 30 percent and 15 percent, respectively, in 1969 to meet the projected plans of the government for livestock expansion.[3] This will mean more imports of soybeans from the United States. One American firm recently negotiated a joint-venture feed mill, and several other American and Japanese firms have shown active interest in constructing large modern feed mills. Local feed mixers, however, have demanded that no further foreign capital be permitted on the grounds that present capacity is sufficient.

The government is taking steps to control the quality of feed and is proposing the immediate construction of large modern mills. In addition, many of the existing plants at the oilseed crushing mills are expanding their capacities. The capacity of the licensed feed mills at the present time is around 750,000 metric tons of feed a year, but only 500,000 metric tons are produced. Some feeds are exported. In addition to the output of the feed mills, 250,000 metric tons of feed are produced on poultry farms, 500,000 tons on duck farms, and 3.2 million tons (including sweet potatoes) on swine farms. To provide for the large and growing demand for soybean meal alone will require vast imports of soybeans.

The increase in the demand for soybean meal for swine alone will be around 150,000 tons each year, and for poultry (chickens, ducks, turkeys) it will be close to the same amount during the next 5 to 10 years as production is being pushed. The dairy and beef industries are still very small.

Soybean meal demand for swine

Hog production is one of the chief sources of income for many Taiwanese farmers. Hogs have been the principal source of meat for the country, and consumption of pork is high. Beef, mutton, or other forms of meat are not substitutable for pork, as the Taiwanese do not care much for these other meats.

The high protein requirement for hogs has traditionally been supplied in the form of soybean cake. Taiwan's farmers have recognized that there is no adequate substitute for soybean cake to support the hog-raising

[3] U.S. Feed Grains Council.

industry.[4] Therefore, Taiwan has continued to make a great effort to increase imports and crushing of soybeans to supply the maximum amount of feed for the industry. Planned increases in hog production will result in further increases in the use of soybean meal and expansion of soybean imports. At one time, half the cake that was produced was used in hog feeds. Additional quantities of soybean cake and meal are used for poultry and fish feed.

Production of pork has increased substantially in recent years and in 1967 reached 315,000 tons compared with 271,000 tons in 1965. The dependence on formula feeds is increasing, which means an opening of the demand for soybean meal.

The amount of soybean cake and meal required for hogs varies from a minimum of 65 pounds to a maximum of 100 pounds per hog. Peanut meal from local peanuts as well as other oilcakes are available in small quantities, but peanut meal is not as acceptable for hogs as soybean cake and meal. Although peanut meal is used to some extent for hog feed, it has been reputed that peanuts produce a soft pork in which the fat has a low melting point; soybean meal and corn are preferred. In some instances rice has been fed to hogs to provide carbohydrates and some protein. To provide carbohydrates hogs are fed a large proportion of the available sweet potato crop.

Hog production reached 1,873,000 head in 1935; they were raised by 420,000 families, an average of 4.4 hogs per family. In 1950, 1,564,000 hogs were raised by 620,000 families, an average of 2.5 hogs per family. In 1968 over 3,583,000 were raised.

The amount of soybean cake and meal required for hog feeding alone in 1968 has been estimated at 150,000 to 200,000 or more tons on the basis of 3.5 million hogs, about 14 percent above 1967 requirements. Planned production of hogs under the government's programs will double output in the next 10 years and thus double present soybean meal requirements.[5]

Soybean meal demand for poultry

Soybean meal is used extensively in feed for poultry (chickens, ducks, geese, and turkeys) on Taiwan. Therefore, the newly developed and expanding broiler and egg industries will insure the increasing demand for U.S. soybeans. Also some sales of U.S. corn to be used with soybean meal in poultry feeds can be expected when the price of corn from Thailand can be met. Some small lots of U.S. corn were purchased for this purpose in the late fall of 1968. Direct sales of U.S. meal to Taiwan will continue to be experimental, but some 49-percent meal could be used advantageously here.

The poultry production business grew slowly on Taiwan after the war, but during the last 10 years the chicken industry has expanded steadily as new U.S. commercial varieties (both broilers and egg-laying) have become successful and as infectious diseases have been controlled. A large number of commercial chicken and duck farms have come into production. Many commercial broiler raisers and egg producers are increasing production rapidly, and some large farms have raised over 40,000 broilers and layers. The island now is adopting modern, scientific feeding methods. This means a market for greater amounts of soybean meal. A 3-pound broiler can be grown in 10 weeks. The feed ratio has reached 2.5 pounds of feed required to produce 1 pound of meat. Egg production has also reached high levels (more than 250 eggs per hen annually). Improved chicken feeds and marketing methods have been developed by cooperatives. The permanent number of all kinds of chickens was reported at around 13 million in 1968.

Duck raising is a popular rural industry but has not reached the commercial level of chickens. Nevertheless, the size of the flocks is growing, and commercial feeds and concentrates are being used more extensively. Most ducks are kept for egg production, but meat production is growing.

In 1968 it was estimated that the country produced 27,391,000 chickens, 12,555,000 ducks, and 2,738,000 geese for slaughter, more than double the 1955 level. Soybean meal requirements for this production can be estimated at over 100,000 tons, indicating that, with existing flocks, total meal demand is around 150,000 tons. Doubling production in 5 to 10 years could require 300,000 tons of soybean meal.

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[4] Soybean study report, Mutual Security Agency, Aug. 15, 1952.

[5] Sixty-five pounds of soybean cake per hog has been the average used on the farms in the past; this compares with around 71 pounds in the United States.

Table 1.--TAIWAN: Livestock and poultry numbers[1] and production of meat

Year	Swine numbers	Pork production	Dairy cattle numbers	Yellow cattle (draft and beef)	Beef production (all cattle)	Chicken numbers	Chicken slaughter	Duck numbers	Duck slaughter	Goose numbers	Goose slaughter	Turkey numbers	Turkey slaughter
Average	*Head*	*Metric tons*	*Head*	*Head*	*Metric tons*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*
1955-59 . . .	3,237,579	169,480	2,305	[2] 89,834	2,870	[4] 6,721	13,937	[4] 3,351	7,013	[4] 1,337	2,734	257	553
1960.	3,164,571	181,084	3,624	93,033	3,252	7,650	15,300	3,822	7,643	1,437	2,874	312	624
1961.	3,105,476	204,866	3,301	96,679	3,702	7,915	15,830	3,911	7,822	1,475	2,949	329	657
1962.	2,921,218	217,402	3,447	96,540	6,171	8,100	16,100	3,958	7,915	1,437	2,874	331	662
1963.	2,676,051	211,921	4,319	97,443	8,537	8,193	16,386	4,052	8,104	1,427	2,855	349	697
1964.	2,717,822	224,273	4,803	97,453	8,531	8,494	16,988	4,413	8,827	1,451	2,903	368	736
1965.	2,935,503	241,412	5,458	98,197	5,043	9,868	19,737	5,378	10,756	1,541	3,082	410	819
1966.	3,110,066	272,110	5,723	99,656	5,454	10,886	21,771	5,550	11,100	1,515	3,029	450	899
1967.	3,002,670	314,627	6,137	98,283	6,853	12,280	24,560	5,838	11,676	1,500	2,794	470	945
1968[3].	3,502,670	322,000	6,500	100,000	9,000	15,000	27,391	6,000	12,555	1,550	2,738	500	926

[1] On feed at end of year. [2] Average 2 years. [3] Preliminary. [4] 1956.

DOMESTIC OILSEED SUPPLIES

Total production of oilseeds appears to have been leveling off in recent years, and annual production has been averaging around 180,000 tons. Peanut production, which has more than doubled since 1955, accounts for over half of the supply. The upward trend in production has come more from increased yields than from added acreage. About one-third of the peanuts produced are consumed directly for food. The balance of around 60,000 tons is crushed for oil and meal. Output of soybeans, which rank second among the oilseeds produced, has tripled since 1955. Rapeseed production has become unprofitable and has decreased rapidly since that time. Sesame, one of the minor oilseeds, has shown no significant change in recent years. Other oilseeds, such as castor, perilla, and safflower are grown in Taiwan, but production is still small. There are no subsidy programs for oilseed production.

Taiwan's domestic supplies are supplemented by large imports of soybeans and varying amounts of rapeseed, copra, safflower, and other oilseeds that may be available.

Chances for increased domestic production of oilseeds do not look particularly favorable because of the limited land available (much of it is going into more profitable and special export crops) for expanding these crops. Also, winter labor to handle the soybean crop is getting scarce. The fall in prices of oilseeds will probably cause farmers to decrease acreage some. Therefore, future increases may come as the result of increased yields rather than larger acreage. Domestic soybean production will meet competition in the area of food production from U.S. soybeans because ordinary U.S. #2 yellow soybeans can be used with equally good results in bean curd.

Table 2.–TAIWAN: Production of oilseeds

Type	1965	1966	1967	1968
	1,000 Metric tons	*1,000 Metric tons*	*1,000 Metric tons*	*1,000 Metric tons*
Soybeans	66	63	75	73
Peanuts (shelled)	88	81	96	74
Rapeseed	23	8	5	[1] 4
Sesame	3	2	3	3
Total	180	154	179	154

[1] Estimate.
Source: From official data.

Soybeans

Soybeans are an important winter crop in Taiwan. The major soybean growing areas are in the southwestern part of the country, particularly Pingtung, Kaohsiung, and Chiayi Prefectures, with 74,416, 20,590, and 7,472 acres, respectively, accounting for 75 percent of the planted area. Production has now reached some 75,000 tons; nearly 35,000 are used for food, particularly bean curd.

While production has increased more than fivefold since 1952, the amount of acreage available for increasing production further is limited. And the amount of increase in production expected is not particularly significant when compared to the amount of soybeans that will be required to supply meal and oil to meet the growing demand. Therefore, the demand deficit will continue to be supplied by imports. Also, it is expected that, in view of the increase in labor demand during the winter months from the nearby industrial area, that there will be a labor shortage. Production of soybeans may actually drop because of the fall in soybean prices resulting from lower priced imports and the drop in farm income from raising soybeans. Competitive vegetable crops may be raised as they become more profitable. Any increases in soybean production will be mainly from increased yields rather than expanded acreage. The actual cultivated area for soybeans is limited, and a growth rate of only around 3.1 percent is expected in the 1969-72 period.

Comparative tests on new, superior-yielding varieties of peanuts and soybeans have been made at the research stations on Taiwan. Increases of 40 to 100 percent in yields have been attained with several new varieties. Soybeans have been grown on unirrigated land and a variety of soils. They often are planted as a second crop with sweet potatoes.

OILSEED PRODUCING AREAS IN REPUBLIC OF CHINA

(TAIWAN)

PRODUCTION, IMPORTS, TOTAL SUPPLY, AND UTILIZATION OF SOYBEANS IN TAIWAN

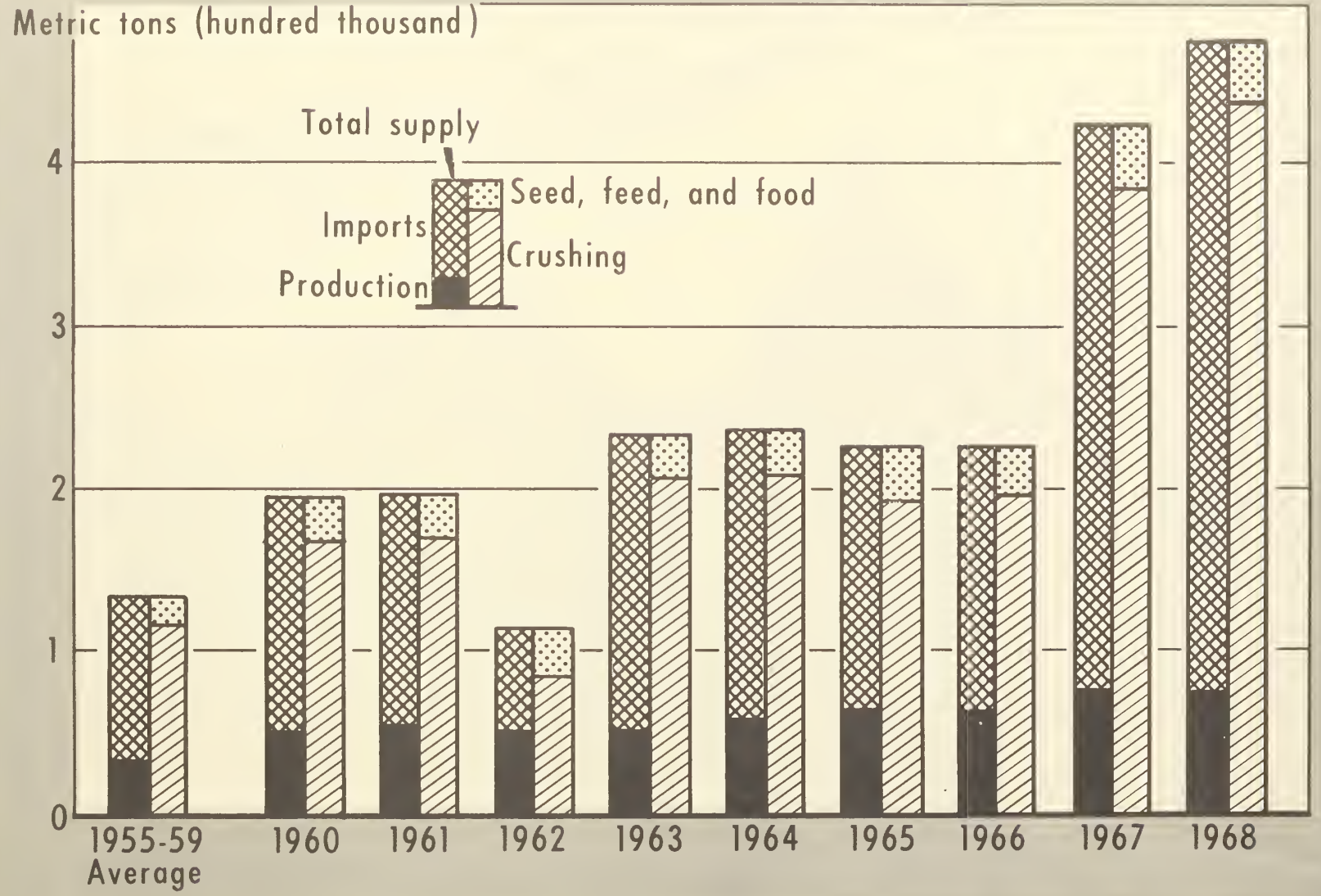

Table 3.–TAIWAN: Soybean production imports, and utilization

Year	Planted area	Production		Yield per acre	Imports	Total supply	Consumption		Food/Seed	Soybean oil productions	
		Quantity	Index				Crushing	Food		Estimated[1]	Reported[2]
Average	*Acres*	*Metric tons*	*1952=100*	*Pounds/ bushels*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*
1955-59.....	106,116	33,956	232	697 (11.6)	101,437	135,393	117,056	15,619	2,718	17,558	8,712
1960.....	147,432	52,653	360	787 (13.0)	143,542	196,195	167,875	24,333	3,987	25,181	14,125
1961.....	153,185	53,900	369	807 (13.4)	144,548	198,448	169,507	24,958	3,983	25,426	18,102
1962.....	135,872	53,011	362	869 (14.5)	62,426	115,437	87,032	24,605	3,800	13,055	15,500
1963.....	136,456	52,645	360	871 (14.5)	182,458	235,103	206,876	24,418	3,809	31,031	17,060
1964.....	125,947	57,616	394	1010 (16.8)	181,832	239,448	208,770	26,939	3,739	31,316	15,616
1965.....	131,398	65,709	449	1103 (18.4)	161,400	227,109	192,231	30,830	4,048	28,835	17,986
1966.....	126,827	63,335	433	1100 (18.3)	164,508	227,838	194,129	29,542	4,167	29,119	14,820
1967.....	129,159	75,167	514	1284 (21.4)	346,900	422,067	383,258	34,417	4,392	57,489	23,612
1968[3].....	122,218	72,996	500	1277 (21.4)	404,900	481,000	441,500	35,000	4,500	66,225	38,141

[1] Author's estimated based on average 15 percent recovery. [2] Reported by the Government of the Republic of China.
[3] Preliminary.

Peanuts

The main crops that compete with peanuts for cultivated land are sweet potatoes, upland rice, beans, and cotton. The natural sandy soils and other factors favor peanut growing in Taiwan's central western districts of Yunlin and Chiayi Prefectures, where over half of the island's peanuts are grown. There are also sizable plantings in Hualien, Changhua, Miaoli, Taichung, and Tainan Prefectures, all on the western plain except Hualien, which is on the east coast. Peanuts are primarily a first crop and are spring planted from December through May. Only one-third of total production is obtained from the second crop grown during the period June-November.

Table 4.–TAIWAN: Peanut production, imports, and utilization

Year	Planted area	Production, shelled		Yield per acre	Imports	Total supply	Exports	Consumption			Peanut oil production	
		Quantity	Index					Crushing	Food	Feed/ Other	Estimated[1]	Reported[2]
Average	*Acres*	*Metric tons*	*1952=100*	*Pounds*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*
1955-59...	247,394	60,984	145	542	–	60,984	694	[3] 35,351	15,343	10,012	14,140	5,270
1960.....	248,328	71,517	170	635	–	71,517	160	42,915	18,392	10,050	17,166	4,124
1961.....	243,678	73,251	174	663	–	73,251	97	44,304	18,988	9,862	17,722	13,898
1962.....	237,967	66,847	159	619	–	66,847	85	40,009	17,123	9,630	16,003	13,681
1963.....	241,355	64,006	152	585	–	64,006	102	37,963	16,173	9,768	15,186	8,174
1964.....	249,267	81,009	193	729	10,575	91,584	109	56,287	25,100	10,088	22,515	12,060
1965.....	256,099	88,072	210	758	2	88,074	139	54,026	23,545	10,364	21,611	7,891
1966.....	242,761	80,497	192	731	2,000	82,497	184	49,398	23,091	9,824	19,759	6,327
1967.....	241,926	95,899	228	874	1,200	97,099	211	59,456	27,641	9,791	23,783	4,817
1968[4].....	235,358	74,440	236	–	–	99,000	–	61,000	28,000	10,000	24,400	5,000

[1] Author's estimate based on average 40 percent recovery.
[2] Reported by the Government of the Republic of China.
[3] Average 1958-59.
[4] Preliminary.
Compiled from official sources.

Peanut growing requires large quantities of labor. Because of this factor and limited cultivated land areas, acreage planted to this crop is not expected to expand significantly in the future. Nevertheless, yields are increasing, and production can be expected to follow the same upward trend as in the United States. Also, peanut growing in Taiwan has not been as profitable as other competing crops, and net returns have fallen. However, as yields increase this relationship may change.

Peanuts are used for crushing and also for food, mainly in the form of roasted and salted peanuts in the shell. However in 1955, at lower production levels, only 30-35 percent of the crop was crushed, and 50 percent was consumed for food; the balance was used for seed and feed.[6] In 1967 this relationship changed; 60 percent was crushed and 29 percent was consumed directly as food.

Rapeseed

Prodution of rapeseed in Taiwan has been reduced considerably in recent years as a result of decreased plantings resulting from the unprofitability of the crop. The drop in the price of vegetable oils in the last 2 years has resulted in reduced rapeseed prices, and farmers who have suffered losses have shifted rapeseed acreage to other, more profitable crops. This shift can be expected to continue. In 1964 cultivation of this crop rose to 48,427 acres, producing 27,343 metric tons of rapeseed, but by 1967 only 11,115 acres were planted and 4,931 metric tons harvested. Production in 1968 was expected to be near this level.

Rapeseed is usually planted as a fall crop following the second rice crop and is planted largely in Changhwa, Taichung, and Miaoli Prefectures in the west central part of Taiwan. Small plantings are made in Hsinchu, Yunlin, and six other Prefectures.

Most of the rapeseed is crushed for oil. The oil is particularly desirable as a cooking and frying oil. Some rapeseed oil is used in paint. Canada has become a new supplier of rapeseed for Taiwan, and imports have now become significant.

Table 5.–TAIWAN: Rapeseed production, imports, and utilization

Year	Planted area	Production		Yield per acre	Imports	Consumption		Rapeseed oil production[1]
		Quantity	Index			Crushing	Seed	
Average	*Acres*	*Metric tons*	*1952=100*	*Pounds*	*Metric tons*	*Metric tons*	*Metric tons*	*Metric tons*
1955-59	8,103	1,247	227	330	–	1,231	16	431
1960	13,353	4,461	813	737	–	4,434	27	1,640
1961	19,565	8,005	1,458	902	–	7,965	40	2,947
1962	23,091	9,994	1,821	954	–	9,947	47	3,681
1963	25,693	13,072	2,381	1,122	–	13,020	52	4,817
1964	48,427	27,343	4,982	1,245	–	27,245	98	10,081
1965	43,472	22,908	4,173	1,162	–	22,820	88	8,443
1966	19,232	8,351	1,521	957	–	8,312	39	3,075
1967	11,115	4,931	898	978	5,715	4,908	23	1,816
1968[2]	10,000	4,400	800	970	48,251	4,380	20	–

[1] Prior to 1959, 35 percent extraction rate; after 1959, 37 percent.
[2] Preliminary.
Compiled from official sources.

Sesame

One of the traditional edible oils used in Taiwan is sesame oil. In 1967, 15,094 acres were planted to sesame and produced 3,439 tons of seed. Most of the crop is produced in Tainan Prefecture in southwestern Taiwan, with adjoining Prefectures, including Chiayi, Kaohsiung, and Yunlin, producing the balance of the crop.

Sesame seeds produce the most desirable vegetable oil in Taiwan. It is used by consumers as liquid oil for cooking because of its attractive odor and taste. Some seeds are also used for edible purposes. The residual cake has in the past been used for fertilizer.

[6] Young-chi Tsui, *A Study of Peanuts in Taiwan,* Chinese-American Joint Commission on Rural Reconstruction, Taipei, p.2.

Minor oilseeds

Many minor oilseeds have been produced on Taiwan for local consumption. These include tea seeds for edible oils and perilla and hemp seeds for industrial oils. Also, some castor beans have been produced and crushed for industrial castor. Castor cake and the other minor oilseed cakes are generally used for fertilizer.

MARKETING

Discharging and handling facilities

Limited discharging facilities and lack of bulk-handling systems hinder the development of larger imports of U.S. soybeans and grains into Taiwan. The two ports now receiving soybeans and grain from the United States are Kaohsiung and Keelung. Most of the soybeans and other oilseeds are imported through the port of Kaohsiung, where they must be unloaded directly to the dock by ships' equipment. They are dumped either on the dock or into bins, after which they are bagged. The bagged beans are stored in flat godowns while awaiting distribution to the soybean crushing mills. This process requires intensive labor and is very slow and costly.

Modern discharging and handling facilities for soybeans and grain are being built at Kaohsiung and are scheduled for completion in 1970. It is believed that this facility will do much to alleviate the tieup (up to 30 days) in discharging cargos of soybeans at this port and thus reduce shipping and handling costs. Pneumatic unloading facilities will be used, and silo storage of 40,000 metric tons will be available for both soybeans and grain upon completion of the first stage of construction, now planned for 1970. The ultimate goal is set for 66,000 metric tons for these silos.

There is a small discharging facility for soybeans and grain at Taiwan's second port of Keelung (Chi-lung). Only small quantities of soybeans are handled here since the 15,000-ton-capacity silo and pneumatic unloading facilities are used mainly for wheat imports. However, silo facilities are also being expanded at Keelung to reach a capacity of 70,000 tons by 1970.

Freight costs

Soybean crushers in Taiwan have organized their purchasing to reduce transportation costs. They have been able to buy through Taiwan importers who deal with foreign agents of both American and Japanese firms and are able to obtain large cargo shipments at reduced ocean-freight rates.

The cost of shipping soybeans from U.S. Gulf ports to Taiwan could be reduced from around $12 to $14 per ton, cost and fast-discharge basis, by maintaining full cargo shipments; these costs do not include the high added charge of demurrage at ports. Costs of shipping soybeans from the United States to Taiwan were as high as $26 per metric ton in 1953. The conference rate on meal in sacks is $44 per short ton and $48.40 per metric ton on the average.

Government controls

The Government of the Republic of China has included soybeans among the few agricultural commodities liberalized for import. Soybeans were removed from the control list in 1966. However, because of the heavy imports in 1968, quotas were imposed in early 1969. Previously, the import duty had been reduced to 10 percent from 15 percent, and soybeans were removed from the *direct-allocation* requirement. A domestic tax is still imposed on imported feed materials, which include soybeans.

As a result of the relaxation of import controls, the quantity of soybeans imported in 1967 and 1968 jumped spectacularly. Soybean meal prices have fallen more in tune with world prices of soybeans.

The government has now imposed a ceiling for April-December 1969 on soybean imports. Issued by the Board of Foreign Trade of the Ministry of Economic Affairs, the new regulations require the establishment of an annual import plan and group purchases by the oilseed crushers. It is believed that the new ceiling on soybean imports, which will call for 490,000 tons of soybeans between April 1-December 31, 1969, will result in less port and inland congestion by providing more orderly discharging, handling, storage, and transportation of soybeans. In 1969 crushers asked for an import quota of 800,000 tons of soybeans per year, which is in line with estimates made in this report.

The government's push to export more poultry and pork products and to lower costs of production for these products may lead to a drop in the present import tax levies on feed ingredients and soybeans. This could result in a reduction in the present 10-percent duty indicated above.

Purchasing

Imports of soybeans, corn, and wheat were free of controls for 2 years, but, as mentioned above, maximum import quotas on soybeans were imposed in 1969. This policy may influence total procurement for 1969 and following years and result in lower total imports in the long run. In 1969, imports of U.S. soybeans under the present quota policy could possibly reach a record of around 610,000 metric tons (Jan.-Mar. 1969, 120,000 tons, plus Apr.-Dec., 490,000 tons).

Nevertheless, another government control factor that is still in effect and helping indirectly to increase the procurement of soybeans is one that requires the crushers and importers to purchase bulk soybeans in large shiploads or cargo lots; thus, group purchases are required.

In order to comply with this requirement, the many small soybean crushers have grouped together to purchase soybeans as a pool through selected Taiwan importers who purchase through international soybean exporting organizations. The result has been increased competition among the international firms for sales of U.S. soybeans. Such large cargo shipments of soybeans are now being purchased regularly for the many small crushers in Taiwan by private traders who act for the various groups. The imported soybeans are then distributed bagged and in small lots to the individual crushers.

This new procedure has been helpful to the small crusher in regulating supplies, but the distribution procedures have brought problems. Many complaints have been made on the quality of the soybeans received in the small lots, particularly about foreign materials in the beans. This is the result of the uneven distribution of these materials when shipped bulk in cargo lots. As a solution those lots high in foreign materials could be distributed or proportioned evenly among all of the small lots so that any one small processer would not receive a high concentration of beans heavy with foreign materials.

The Taiwan Oil Industry Corporation has been organized as a purchasing company representing a large group of crushers among the members of the Taiwan Regional Association of Vegetable Oil Expelling and Refining Industries. The China Trade Development Corporation in Taipei is also purchasing soybeans for some 40 mills. The Trading Department of the Central Trust of China, 49 Wu Chang Street, Sec. 1, Taipei, Taiwan, is a large purchaser of soybeans, particularly for quasi-government operations such as Taiwan Sugar Corporation's Kaohsiung Agricultural Chemical Works and other crushers and for military use.

A partial list of importers or agents of foreign firms selling soybeans in Taiwan follows:

China Trade and Development Corporation Tai-Ai Building, 59 Kwan Chien Road, Taipei, H.F. Lee, Manager. Purchases soybeans and represents group of oilseed crushers (40) and Mitsui and Company, Japan.

China Industrial Management Co., Ltd. 75 Kuan Chien Road, (P.O. Box 457), Taipei, William Z.H. Ching, President. Represents Continential Grain Company, United States.

Taiwan Oil Industries Corp., 59 Kwan Chien Rd., Taipei, J.T. Chan, Managing Director, *Yu-Pan Chang, Manager.* Represents a large group of soybean crushers.

King Lloyd & Co., Ltd., Wan Chee Building, 41 Chung Hwa Road, Taipei, Wu-Si Ding, President. Represents Arkansas Grain Corp., United States.

Sueling INC., 48 Nanking East Road, Section 1, Taipei, Sueling Li, President. Represents Cargill, Inc., United States.

Credit

The large Japanese trading firms have been providing current letters of credit with interest rate currently at 7.5 percent up to 180 days to Taiwan soybean crushers. These terms have resulted in an increased volume of business in American soybeans, but the soybean sales have been controlled largely by Japanese firms. U.S. firms selling in this market have been unable to provide such liberal credit, and the resulting intense competition for this market has made it difficult for them to obtain business when soybeans are purchased on a c. & f. basis.

U.S. soybeans are discharged from ship at Taiwan's port of Kaohsiung and are bagged on the dock. Unloading of this ship took 12 days. Modern discharging and handling facilities are being built at this port and are scheduled for completion in 1970. These facilities should reduce delays in unloading.

Workers sweep up the last of the shipment and bag the beans. There is no doubt the discharging and bagging nethods now in use at Taiwan's ports are causing a considerable increase in the foreign-material content of the bagged beans. Uniform distribution then becomes a problem.

Below, bagged soybeans are moved from the dock on small carts. Bagged beans are stored in godowns until they can be distributed to the crushing mills. Left, a small grocery store where soybeans are sold to housewives who make their own soybean foods.

Quality problems

The image of U.S. soybeans in Taiwan is good. Nevertheless, in recent months several importers and crushers have reported that the quality of the U.S. #2 yellow soybeans that they have been importing seems to be getting worse. Their complaints stem from the reduced oil content that was found in the last 6 months of 1968. Also, complaints have been received on high foreign-material content and heat-damaged soybeans.

There is no doubt that the present discharging and bagging methods and practices used at Taiwanese ports are causing a considerable increase in the foreign-material content of the bagged soybeans. The large amount of hand labor and the discharging facilities used, such as shovels and canvas slings, have no doubt increased the percentage of splits as well as the amount of foreign materials in small lots. Uniform distribution becomes a severe problem in such instances.

Heat damage to soybeans, of course, has been increased greatly with the long delays at ports prior to discharge. Material discoloration from heat could be prevented by quick discharge.

Crushing margins wide

Crushing soybeans in Taiwan is a profitable business at the present time. Increases in efficiency at several modern solvent plants is needed when compared with similar large U.S. plants, but the level is far above that of many of the older, complex mills with hydraulic, screw press, and solvent-extraction operations all under the same roof.

Processing margins reported by several companies are wide, ranging from $5.00 to $21.90 per metric ton. Average costs and two of the reported margins were as follows:

Costs:	*Dol. per metric ton*
Soybean cost (delivered at inland plants)	152.50 (cost at seaport $137.50)
Cost of crushing soybeans	8.75
Total cost	161.25
Top of range ($21.90):	
Returns from soybean oil (330#15%@18¢)	59.40
Returns from soybean meal ($167 per ton @86%[7])	123.75
Total returns, oil and meal	183.15
Gross margin for crushing a metric ton of soybeans	21.90
Bottom of range ($5.00):	
Total returns from oil, meal, and cake (wheels)	166.25
Gross margin for crushing a metric ton of soybeans	5.00

As long as this cost-margin relationship exists, crushing will be profitable in Taiwan, and the industry can be expected to expand. These costs are estimates and reflect prices that were in effect at the time this survey was made in late 1968.

[7]Eighty-six percent per ton based on 7-percent moisture added to meal plus oil recovery of 15 percent.

APPENDIX

Major Soybean and Oilseed Crushing Mills in the Republic of China (Taiwan)[1]

NORTHWEST AREA

Taipei Prefecture (7 mills)

Chung Hsing Solvent Oil Factory Co., Ltd.
No. 311 Ming Sheng Road, Taipei, Taiwan

Chu Cheng Oil Co., Ltd.
No. 352 Kang Ting Road, Taipei

Chin Tai Oil Mill Co., Ltd.
No. 78 Fu-Teh North Road, Sang Chung City
Taipei Hsien, Taiwan

Heng Yuan Enterprise Co., Ltd.
No. 69 Section 1, Chungking South Road, Taipei

Tsong Fa Chemical Industrial Co., Ltd.
No. 32-2 Hsin She, Kang Chuei Li, Pan Chiao
Taipei Hsien, Taiwan

Ding Mei Oil Mfg. Co., Ltd.
No. 13-1 Hsin She, First Lin, Kang Chuei Li,
Pan Chiao, Taipei Hsien, Taiwan

Ta Hwa Industrial Co., Ltd.
No. 42-2 Chung Shan Road, Chung Ho Hsiang
Taipei Hsien, Taiwan

Keelung City (2 mills)

Li Jen Yi Chi Oil Mill Co., Ltd.
No. 2, Shan Chiao Street, Wu Doo, Keelung

Li Jen Yi Chi Oil Mill Co., Solvent Branch
No. 23 Hsi Tou Street, Chi Doo, Keelung

Tao Yuan (Taoyuan) (4 mills)

Tao Yuan Oil Industrial Co., Ltd.
No. 20 Tah-Lin Road, Tao Yuan Chen

Jui Fa Chung Chee Oil Factory Co., Ltd.
No. 59 Chien Kuo Road, Tao Yuan Chen

Tung Ho Oil Industrial Co., Ltd.
110-1 Kwei Shan Street, Hsin Luh Village
Kwei Shan Hsiang, Tao Yuan Hsien

Yung Sheng Oil Co., Ltd.
No. 5 Lane 194 Hsin Hsing Road, Chung Li
Tao Yuan Hsien

Hsin Chu (1 mill)

Hsin Chu Food Industrial Co., Ltd.
No. 19 Nanta Road, Hsin Chu

CENTRAL AREA

Miao Li (Miaoli) Prefecture (5 mills)

Chu Nan Oil Mill Co., Ltd
No. 96 Tong Ping Road, Shin Nan Li
Chu Nan Chen, Miao Li Hsien

Hui Feng Oil Mill Co., Ltd.
No. 22 Yi Min Street, Pei Miao Li
Miao Li

Hui Sheng Solvent Oil Co., Ltd.
No. 219-3 Fu-Li Li, Miao Li

Teh Yuan Oil Mill Co., Ltd.
No. 236 Sheng Li Street, Hou Lung
Miao Li Hsien

Dah Teh Yuan Industrial Co., Ltd.
No. 207-3 Sheng Li Street, Hou Lung
Miao Li Hsien

Taichung (22 mills)

Tong Shun Industrial Factory Co., Ltd.
No. 2 Chung Shan Road, Ching Suei Li
Ching Suei, Taichung Hsien

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[1]Members of Taiwan Vegetable Oil Association (TVOA) as of April 30, 1969.

Taichung (22 mills) Continued

Yu Hsing Oil Factory Co., Ltd.
No. 5 Shan Mei Road, Ching Suei,
Taichung Hsien

Ta Yuan Oil Factory Co., Ltd.
No. 28 Ching Pu Road, Ching Suei,
Taichung Hsien

Chia Fha Industrial Co., Ltd.
No. 29 Ta Tung Street, Hsing Jen Li,
Shalu, Taichung Hsien

Chia Fa Hsing Enterprise Co., Ltd.
No. 33 Ta Tung Street, Shalu, Taichung Hsien

Chia Fa Chang Agri-Chemical Co., Ltd.
No. 31 Ta Tung Street, Shalu, Taichung Hsien

Sin Hong Mei Oil Mill Co., Ltd.
No. 146 Chung Shan Road, Shalu, Taichung Hsien

Kun Ming Oil Mfg. Co., Ltd.
No. 62 Hsing An Road, Shalu, Taichung Hsien

Kun Ming Oil Mfg. Co., Ltd. Extracting Branch
No. 60 Hsing An Road, Shalu, Taichung Hsien

Fong Yu Oil Mill Co., Ltd.
No. 66 Kung An Road, Tun Hsi Village, Taichung Hsien

Hsieh Chuan Oil Mfg. Corporation
No. 127 Chung Cheng Road, Feng Yuan,
Taichung Hsien

Yuan Shuen Oil Mill
No. 72 San Fong Road, Feng Yuan, Taichung Hsien

Kuo Kang Industrial Co., Ltd.
No. 199-1 Fong Shih Road, Shih Kang Hsiang
Taichung Hsien

Long Shan Industrial Corporation
No. 7 Nei Hsin Road, Ta Li Hsiang, Taichung Hsien

Teh Long Oil Mill Corporation
No. 51 Chung Shan Road, Shin Kuang Village
Tai Ping Hsiang, Taichung Hsien

Tong Kuang Industrial Corporation
No. 68 Tung Ping Road, Tung Ping Village
Tai Ping Hsiang, Taichung Hsien

Ho Hsing Oil Mill Corporation
No. 82-2 Tung Ping Road, Tung Ping Village
Tai Ping Hsiang, Taichung Hsien

Hsin Kuang Industrial Corporation
No. 438 Chung Cheng Road, Wu Feng Hsiang,
Taichung Hsien

Taichung Rice & Oil Mill Co., Ltd.
No. 89 Section 1, San Min Road,
West District, Taichung

Fu Chang Industrial Co., Ltd.
No. 171 Yu Ying Road, East District, Taichung

Ta Feng Oil Mill
No. 102-8 Sha Tien, Ting Chieh Village
Ta Tu Hsiang, Taichung Hsien

Chin Yung Chang Industrial Co., Ltd.
No. 84-1 Chung Cheng Road, Chia Yin Village
Wu Feng Hsiang, Taichung Hsien

Chang Hwa (Changhua) (9 mills)

Chung Yi Chemical Co., Ltd.
No. 49-1 Ping Ho Chuang, Ping Ho Li
Chang Hwa City

Yuan Chuan Bean Oil Mfg. Co., Ltd.
No. 117 Hwei Lai Road, Yuan Lin Chen
Chang Hwa Hsien

Ta Tong Oil Company, Ltd.
No. 10-4 Chung Shan Road, Yuan Lin Chen
Chang Hwa Hsien

Chung Yuan Bean Oil Mfg. Co., Ltd.
No. 117-2 Hwei Lai Street, Yuan Lin Chen
Chang Hwa Hsien

Yi Yue Bean Oil Mfg. Co., Ltd.
No. 37 Fu Tseng Road, Yuan Lin Chen
Chang Hwa Hsien

Ta Tao Bean Oil Mfg. Co., Ltd.
No. 37-1 Fu Tseng Road, Yuan Lin Chen

Tai Shan Oil Co., Ltd.
No. 37-2 Fu Tseng Road, Yuan Lin Chen

Chien Hsing Oil Extraction Co., Ltd.
No. 72 Yuan Lu Road, Yuan Lin Chen

Chang Hwa (Changhua) (9 mills) Continued

Ta Fah Oil Mill Co., Ltd.
No. 2-1 Chung Shan Road, Chung Yang Li,
Yuan Lin Chen

Yun Lin (Yunlin) (2 mills)

Far East Enterprise Co., Ltd.
No. 50 Pei Shih Road, Pao Tsuang Li
Tou Liou Chien, Yun Lin Hsien

Hong Tai Industrial Factory
No. 12 Yung An Street, Pei Ming Li,
Tou Nan Chen, Yun Lin Hsien

Chia Yi (Chiayi) (9 mills)

Heng Lung Oil Mill Co., Ltd.
No. 35 Chien Kuo Road, Tung Jung Village
Min Hsiung Hsiang, Chia Yi Hsien

Lien Hwa Industrial Corp. Chia Yi Mill
No. 29 Lane 695 Po Ai Road, Chia Yi City

Yung Fang Oil Mill Corp., Ltd.
No. 140 Hsin Yi Road, Chia Yi City

Taiwan Oil Co., Ltd.
No. 119 Hsia Chuang, Chia Yi City

Yu Yuan Industrial Co., Ltd.
No. 95-16 Lun Tse, Lun Yang Village,
Liou Chiao Hsiang, Chia Yi Hsien

Hwa Chang Oil Mill Co., Ltd.
No. 37 Lane 79 Pei Hsing Street
Chia Yi City

Hsin Long Yi Nong Agricultural Processing Factory
No. 120 Pei Kang Road, Chia Yi City

Yung Yuan Solvent Oil Mfg. Co., Ltd.
No. 115 Hu Tse Nei, Hu Nei Li
Chia Yi City

Yuan Hsing Oil Mill Yuan Chi Co., Ltd.
No. 152 Po Ai Road, Chia Yi City

SOUTHWEST AREA

Tainan Prefecture (11 mills)

Yung Yu Oil Extracting Plant Co., Ltd.
No. 1-11 Kuang Wen Road, Shan Hua Chen
Tainan Hsien

Ta Shan Oil Mill
No. 589 Kung Yuan Road, Tainan City

Feng Nien Industry Co., Ltd.
No. 391 Yu Nong Road, Tainan City

Ta Cheng Oil Co., Ltd.
No. 393 Yu Nong Road, Tainan City

Tong Fa Oil Industries Corp.
No. 824 Kung Yuan Road, Tainan City

Tong Fa Oil Industries Corp.
Solvent Oil-Press Branch Factory
No. 822 Kung Yuan Road, Tainan City

Yuon Chong Oil Mill
No. 55 Lane 87 Pei Yuan Street, Tainan City

Yi Cheng Oil Mill Co., Ltd.
No. 129 Chung Shan Road, Ma Tou Chen,
Tainan Hsien

Nan Hwa Industrial Co., Ltd.
No. 133 Kai Shan Road, Tainan City

Chia Li Industrial Co., Ltd.
No. 3-1 Chia Li Chen, Tainan Hsien

Tung Fan Oil Co., Ltd.
No. 26 Liou Chia Ting, Yung Kang Hsiang,
Tainan Hsien

Kao Hsiung (Kaohsiung) (13 mills)

Nan Shing Oil Mill Co., Ltd.
No. 114 Chu Tung Village, Lu Chu Hsiang,
Kao Hsiung Hsien

Hong Cheng Oil Mill Co., Ltd.
No. 108-2 Chung Shan Road, Chu Tung Village
Lu Chu Hsiang, Kao Hsiung Hsien

Kao Hsiung (Kaohsiung) (13 mills) Continued

Ching Fong Oil Mill Co., Ltd.
No. 38 Sou Tien Road, Wei Jen Li, Kang Shan Chen
Kao Hsiung Hsien

Fu Tai Corp. Refinery Oil Mill
No. 93-1 Chien Feng Road, Kang Shan Chen,
Kao Hsiung Hsien

Tai Hwa Oil Industrial Co., Ltd.
No. 52-1 Min-Tsu First Road, San-Ming District,
Kao Hsiung City

TSC Kao Hsiung Agri-Chemical Factory
No. 4 Cheng Kung 2nd Road, Kao Hsiung City

Hwei Tung Chemical Industrial Co., Ltd.
No. 179 Ho Tung Road, Chien Chin District,
Kao Hsiung City

San Fu Oil Industrial Co., Ltd.
No. 6-3 Chi Shan Street, Jui Chi Li, Chi Shan Chen
Kao Hsiung Hsien

Hsieh Yuan Oil Mill
No. 128 Kang Shan Road, Kang Shan Chen,
Kao Hsiung Hsien

Teh Chang Industrial Co., Ltd.
No. 50 Tai Shan Road, Kang Shan Chen,
Kao Hsiung Hsien

Tung Shan Agri-Products Processing Factory
No. 239-15 Chung Shan Road, West Village
Lu Chu Hsiang, Kao Hsiung Hsien

Li Fa Oil Mill
No. 2 Kang Shan Road, Kang Shan Chen,
Kao Hsiung Hsien

Jung Li Oil Extraction Factory
No. 59-2 Tai Ping Road, Hsia Kang, Lu Chu Hsiang
Kao Hsiung Hsien

Ping Tung (Pingtung) (12 mills)

Teh Hsing Oil Mill
No. 8 Feng Ming Road, Lu Feng Village,
Chu Tien Hsiang
Ping Tung Hsien

Tai Shing Factory Oil Corp.
No. 9 Min Sheng East Road, Ping Tung City

Yuan Yi Oil Industry Co., Ltd.
No. 103 Kuei Jen Road, Jui Kwang Li, Ping Tung City

King Tai Yi Oil Factory Corporation, Ltd.
No. 79-12 Min Sheng Road, Ping Tung City

Yung Long Industrial Co., Ltd.
No. 6 Min Sheng East Road, Ping Tung City

Hsin Chih Cheng Industrial Co., Ltd.
No. 81-4 Min Sheng Road, Ping Tung City

Chien Cheng Oil Co., Ltd.
No. 7-5 Min Sheng Road, Ping Tung City

Yung Chi Oil Mill Co., Ltd.
No. 22 An Shin Lane, Min Sheng East Road,
Ping Tung City

Yung Tong Oil Industrial Co., Ltd.
No. 35 Kwang Fu Road, Kwang Chun Li,
Chao Chow Chen
Ping Tung Hsien

Tung Yu Industrial Co., Ltd.
No. 60 Min Sheng East Road, Ping Tung City

Yung Kwang Fats & Oil Co., Ltd.
No. 215 Kwang Fu Road, Chao Chow Chen
Ping Tung Hsien

Chang Hsing Oil Industrial Co., Ltd.
No. 7-14 Min Sheng Road, Jui Kwang Li
Ping Tung City

EASTERN AREA

Tai Tung Oil Mill Co., Ltd.
No. 28 Cheng Chi Road, Fu Shing Li
Tai Tung

Dah Ching Cheng Oil Processing Mill
No. 14 Jie Yueh Street, Hwa Lien City

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